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PRELIMINARY ASSESSMENT/ VISUAL SITE INSPECTION

BODINE ELECTRIC COMPANY
CHICAGO, ILLINOIS
ILD 005 069 224

FINAL REPORT

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, DC 20460

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EXECUTIVE SUMMARY

B&V Waste Science and Technology Corp. (BVWST) performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) and other areas of concern (AOC) at the Bodine Electric Company (Bodine Electric) facility in Chicago, Illinois. This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs. No AOCs were identified during the PA/VSI. In addition, a completed U.S. Environmental Protection Agency (EPA) Preliminary Assessment Form (EPA Form 2070-12) is included in Attachment A to assist in prioritization of RCRA facilities for corrective action.

Bodine Electric manufactures fractional horsepower alternate current (AC) and direct current (DC) motors, gear motors, and electronic speed control equipment. The facility generates and manages the following waste streams: aluminum and lead dross (D008), rust inhibitor (D001), nonhazardous water-based coolant, waste oil (D001), nonhazardous oil-coated scrap metal, paint sludge (F005), varnishing waste (D001), and nonhazardous general office wastes. Spent mineral spirits (D001), spent methylene chloride (F001), and spent trichloroethylene (F001) are generated from cleaning parts in buckets or parts washers placed in about 15 locations throughout the facility and maintained by Safety Kleen Corp. (Safety Kleen) in Chicago, Illinois.

No AOCs were identified at the facility; however, the PA/VSI identified the following 10 SWMUs:

1. Dross Satellite Accumulation Area
2. Rust Inhibitor Satellite Accumulation Area
3. Olson Satellite Accumulation Area
4. Hyde Satellite Accumulation area
5. Screw Machine Satellite Accumulation Area
6. Scrap Metal Dumpster
7. Varnish Satellite Accumulation Area
8. Incinerator
9. Drum Storage Area
10. Loading Dock

Bodine Electric has operated at its current location since 1957. The facility occupies 11 acres in an industrial and residential area and consists of one 370,000-square-foot building. This facility employs about 525 people. The facility's current regulatory status is that of a large-quantity generator of hazardous waste. The container storage area was RCRA closed in 1986 as an area of hazardous waste storage for longer than 90 days. IEPA approved closure on October 5, 1987. RCRA inspections were conducted by IEPA on October 19, 1982, and July 18, 1985. Enforcement action was recommended in 1973 for odor complaints from the facility by area residents. No further information regarding this inspection was available. Violations were also noted in 1985, including no written schedule of inspection for equipment, no written operating record, personnel training inadequacies, no waste analysis plan, an inadequate contingency plan, and no weekly inspections. No record of subsequent compliance regarding these violations was available.

Before 1957, the land was used as a golf course. Painting, machining, and die casting operations run three shifts 7 days a week; all other operations run one day-shift Monday through Friday. Facility operations are generally the same as they were when operations began in 1957.

The facility is bordered on the north by a park and a parking lot, on the south by WGN television studios, on the east by residences and a parking lot, and on the west by an industrial park. The nearest school, Lane Technical High School, is located about 1/4 mile south of the facility. There is fencing at the northern side of the building, but it does not surround the property or prevent access onto the property. Facility access is controlled by a security guard during the second and third shifts.

The nearest surface-water body, the North Branch of the Chicago River, is about 1/8 mile west of the facility and is primarily used for industrial purposes. There are no other significant surface-water bodies within 2 miles of the facility.

Ground water is not used as a drinking-water supply. The location of the nearest drinking-water well is unknown. Lake Michigan, located approximately 4 miles east of the facility, is the drinking-water source for Chicago. Sensitive environments are not located onsite. The nearest wetland is located about 1/8 mile west of the site.

One release has been documented at the Bodine Electric facility. This release occurred in May 1991, while an employee was dumping oil-coated scrap metal into the Scrap Metal Dumpster

(SWMU 6). The oil, which contained trace amounts of lead, leaked into a floor drain, discharging an undetermined amount to the sanitary sewer. This was caused by an employee who did not remove the lead-carrying cutting oils from the metal chips, enabling the oils to leak onto the floor and into the drain. An 18-inch-high concrete barrier was built around the drain and absorbent materials were put in the drain to prevent oils from escaping into the sewer system in the future. Water in the drain was sampled and the incident was absolved by the Metropolitan Water Reclamation District of Greater Chicago.

The container storage area (S01) was RCRA closed in 1986 as an area of hazardous waste storage for longer than 90 days, in accordance with the approved closure requirements of Interim Status Standards 35 Illinois Administrative Code, Part 725 (40 CFR Part 265). Closure activities involved removal of all hazardous wastes in storage, decontamination and rinsing of the storage area, and sampling and analysis of the rinsate. The Illinois Environmental Protection Agency (IEPA) approved closure on October 5, 1987. The facility currently operates as a large-quantity generator of hazardous waste only.

The facility has permits to operate the following emission sources and/or air pollution control equipment: boilers; crucible furnaces; waterwash paint booths; soldering areas; gear cutters; grinders; polishers; belt sanders; varnish drying ovens; and one parts dryer, parts washer, degreaser, epoxy booth, varnish trickle machine, paint drying oven, incinerator, melting pot, preheat and annealing furnace, acid varnish stripper, rotor undercutter, drilling/tapping machine with rotocyclones, and electrostatic epoxy applicator with dust collector.

Bodine Electric has had two occurrences of problems regarding air emissions. In February 1973, an EPA investigation of Bodine Electric was conducted and residents in the area of the facility were asked for their observations. All complained of smoke and odors from the facility and were willing to testify. Enforcement action was recommended. No further information regarding this investigation was available. In September 1985, the following air permit violations were noted: failure to secure a current operating permit, failure to keep a maintenance record for air pollution control equipment, and failure to submit a fugitive dust operating program for the parking lot. No further information regarding this investigation was available. The facility is not required to have a National Pollutant Discharge Elimination System (NPDES) permit.

The potential is low for release of hazardous constituents from all facility SWMUs to ground water, surface water, air, and on-site soils. All of the SWMUs are located indoors and

above ground. All of the containers used to store waste are in good condition with no visible signs of cracks or leakage. Containers are kept on a concrete floor throughout the facility. The floor is in good condition, showing no visible signs of cracking. No waste is stored at this facility for longer than 90 days.

BVWST recommends that no further action be taken for the facility.

1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC) received Work Assignment No. C05087 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5. As a team member with PRC under the TES 9 contract, B&V Waste Science and Technology Corp. (BVWST) conducted the PA/VSI for the Bodine Electric Company (Bodine Electric) facility.

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells.
- Closed and abandoned units.
- Recycling units, wastewater treatment units, and other units that EPA has generally exempted from standards applicable to hazardous waste management units.
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading-unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.

An AOC is defined as any area where a release to the environment of hazardous waste or constituents has occurred or is suspected to have occurred on a nonroutine and nonsystematic

basis. This includes any area where such a release in the future is judged to be a strong possibility.

The purpose of the PA is as follows:

- Identify SWMUs and AOCs at the facility.
- Obtain information on the operational history of the facility.
- Obtain information on releases from any units at the facility.
- Identify data gaps and other informational needs to be filled during the VSI.

The PA generally includes review of all relevant documents and files located at state offices and at the EPA Region 5 office in Chicago.

The purpose of the VSI is as follows:

- Identify SWMUs and AOCs not discovered during the PA.
- Identify releases not discovered during the PA.
- Provide a specific description of the environmental setting.
- Provide information on release pathways and the potential for releases to each medium.
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases.

The VSI includes interviewing appropriate facility staff, inspecting the entire facility to identify all SWMUs and AOCs, photographing all visible SWMUs, identifying evidence of releases, initially identifying potential sampling parameters and locations, if needed, and obtaining all information necessary to complete the PA/VSI report.

This report documents the results of a PA/VSI of the Bodine Electric facility in Chicago, Illinois. The PA was completed on February 7, 1992. BVWST gathered and reviewed information from the Illinois Environmental Protection (IEPA) files, EPA Region 5 RCRA files, Federal Emergency Management Agency (FEMA) flood plain maps, National Wetland Inventory Maps

(NWI), United States Geological Survey (USGS) topographic maps, and the United States Department of Agriculture (USDA). The VSI was conducted on February 10, 1992. It included interviews with one facility representative and a walk-through inspection of the facility. BVWST identified 10 SWMUs and no AOCs at the facility.

BVWST completed EPA Form 2070-12 using information gathered during the PA/VSI. This form is included in Attachment A. The VSI is summarized and nine inspection photographs are included in Attachment B. Field notes from the VSI are included in Attachment C.

2.0 FACILITY DESCRIPTION

This section describes the facility's location, past and present operations (including waste management practices), waste generating processes, history of documented releases, regulatory history, environmental setting, and receptors.

2.1 FACILITY LOCATION

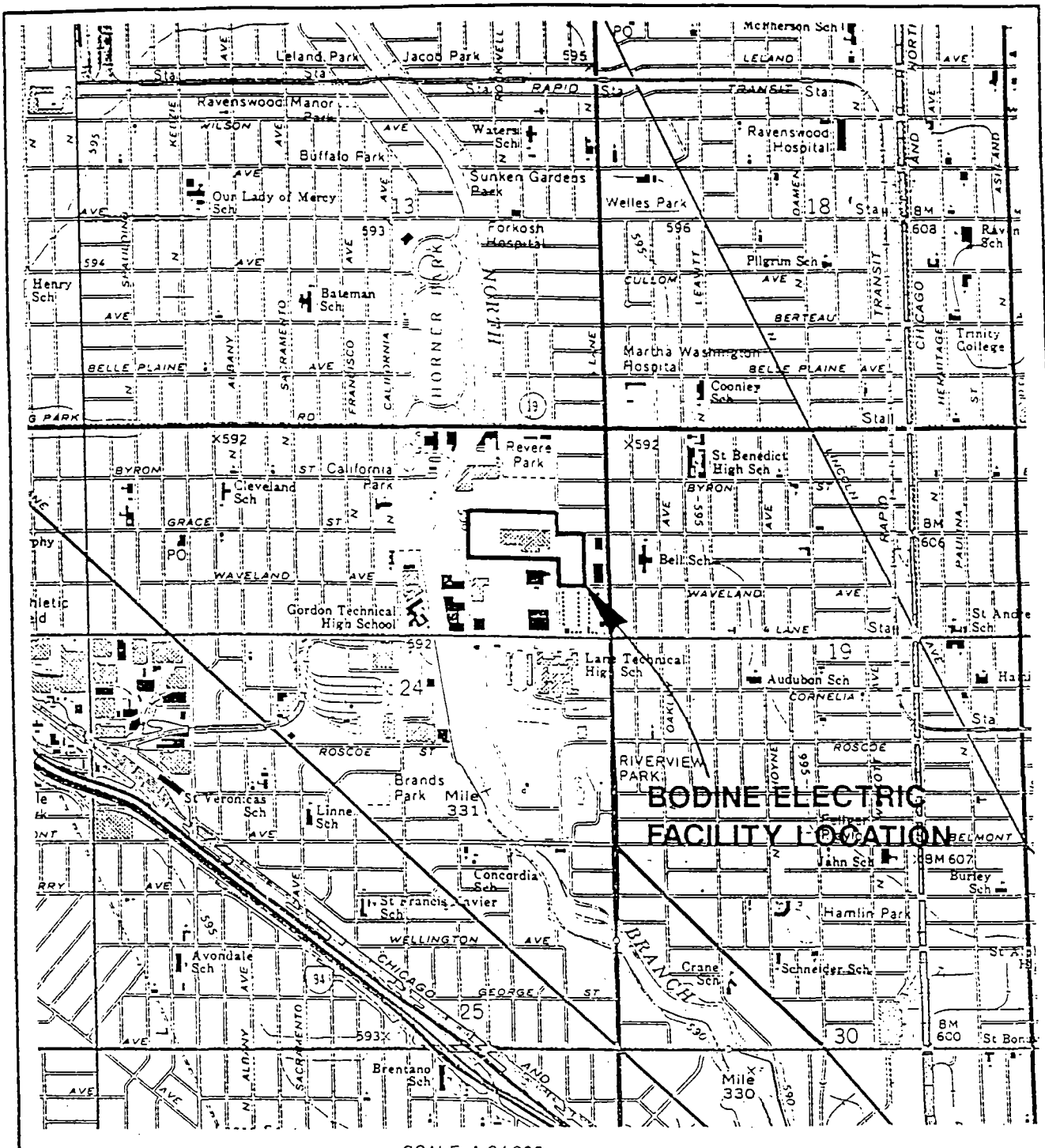
The Bodine Electric facility is located at 2500 West Bradley Place in Chicago, Cook County, Illinois. Figure 1 shows the location in relation to the surrounding topographic features (latitude 41° 53' 45" N and longitude 87° 41' 2" W). The facility occupies 11 acres in an industrial and residential area and consists of one 370,000-square-foot building. The facility is bordered on the north by a park and a parking lot, on the south by WGN television studios, on the east by residences and a parking lot, and on the west by an industrial park.

2.2 FACILITY OPERATIONS

Bodine Electric manufactures fractional horsepower alternate current (AC) and direct current (DC) motors, gear motors, and electronic speed control equipment. Facility operations can be subdivided into two interrelated divisions: the component manufacturing division and the component assembly division.

The component manufacturing division consists of die casting, painting, and machining. Two kinds of parts are manufactured: stators (stationary parts) and rotors (moving parts). Stator production starts with die casting. Motor housings, end shields, and bases are die cast in automatic, gas-fired crucibles where aluminum and zinc ingots are melted down. The die cast machines operate at 1,250°F. This process generates aluminum and lead dross (D008). Five die cast machines are located in the die casting room at the northeastern part of the facility. There is an approximately 2-square-foot by 6- to 8-inch deep metal drop pan for each of the die cast machines in this area. Waste aluminum and lead dross that falls into the drop pans is cooled and then emptied into either 55-gallon drums or 4-cubic-foot steel containers.

Stator and rotor parts are washed in portable Safety Kleen parts washers placed in approximately 15 stations throughout the facility. The Safety Kleen parts washers contain mineral spirits, methylene chloride, and trichloroethylene. Safety Kleen removes, recycles, and replaces



SCALE 1:24 000

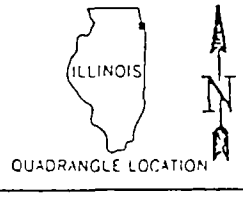
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

SOURCE:

CHICAGO LOOP QUADRANGLE
ILLINOIS–COOK CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



BODINE ELECTRIC
CHICAGO, ILLINOIS

FIGURE 1
FACILITY LOCATION

SCIENCE AND TECHNOLOGY CORP.

the contents of these parts washers. The stator parts are then primed and spray painted with black enamel. This is done in either one of two spray paint booths that use a water-scrubbing system and are controlled by a water-wash curtain. Painting generates a paint sludge (F005). After being painted, parts are dried in two continuous gas-fired bake ovens operating at 275°F.

Next, the stator parts are dip coated in trickle varnish machines, and then dried in three walk-in type paint bake ovens which operate at 275°F. The coating process also consists of spray coating parts in automatic indexing, baffle-controlled spray booths. This process generates rust inhibitor (D001). After coating, most stators are finished and ready for motor assembly with rotors.

To produce rotors, raw metal is ground, drilled, and cut in the machining area. Grinders, rotocyclones, and lathes are used on the raw metal, generating scrap metal. This scrap metal may be coated with waste oil (D001). Oil-coated scrap metal is put through a screw machine chip spinner at the southeastern part of the facility. This machine separates the oil from the metal so that the metal can be either reused or disposed of. The rotor parts, like stators, are also spray coated in the automatic indexing, baffle-controlled spray booth, generating rust inhibitor (D001). Rotors are then sanded and polished, after which they are ready to be assembled with the stators.

The component assembly division is typically the final stage of manufacturing. After assembly, however, some parts are varnished using a dip tank or trickle process, generating varnishing waste (D001). After the varnish application, all parts are considered finished.

This facility has ten solid waste management units. The Dross Satellite Accumulation Area (SWMU 1) is used to accumulate aluminum and lead dross (D008) from die casting operations. Initially, this waste is stored in SWMU 1 in either 55-gallon drums or 4-cubic-foot steel containers then moved to the Loading Dock (SWMU 10) for pick up.

The Rust Inhibitor Satellite Accumulation Area (SWMU 2) is used to accumulate waste rust inhibitor (D001) from the spray coating process. Initially, this waste is stored in SWMU 2 in 55-gallon drums then moved to and stored in the Drum Storage Area (SWMU 9). This waste is stored here until it is moved to the Loading Dock (SWMU 10) for pick up.

The Olson Satellite Accumulation Area (SWMU 3) consists of one or two satellite drums used to store a paper filter saturated with nonhazardous water-based coolant. This waste is

generated in an Olson machine, cut, crushed, and thrown into satellite drums. Initially, this waste is stored in SWMU 3 then moved to the Loading Dock (SWMU 10) and dumped with regular garbage.

The Hyde Satellite Accumulation Area (SWMU 4) consists of a satellite drum used to store waste oil (D001). This waste is generated in a Hyde machine, which pours the waste oil directly into the 55-gallon drum. Initially, this waste is stored in SWMU 4 then moved to and stored in the Drum Storage Area (SWMU 9). This waste is stored here until it is moved to the Loading Dock (SWMU 10) for pick up.

The Screw Machine Satellite Accumulation Area (SWMU 5) consists of one or two satellite drums used to store nonhazardous oil-coated scrap metal. The oil-coated scrap metal is put into a screw machine chip spinner to separate the oil from the metal. The oil is retained and reused and the metal chips, with small traces of waste oil remaining, are placed in the 55-gallon drums. Initially, the oil-coated scrap metal is stored in SWMU 5 then moved to the Scrap Metal Dumpster (SWMU 6).

The Scrap Metal Dumpster (SWMU 6) receives the nonhazardous oil-coated scrap metal from the Screw Machine Satellite Accumulation Area (SWMU 5). This waste is stored in SWMU 6 until it is picked up.

The Varnish Satellite Accumulation Area (SWMU 7) is used to accumulate varnishing waste (D001). Varnishing waste is put into 55-gallon steel drums. The waste is poured through funnels inserted in the drum openings. Initially, this waste is stored in SWMU 7 then moved to the Drum Storage Area (SWMU 9). This waste is stored here until it is moved to the Loading Dock (SWMU 10) for pick up.

The Incinerator (SWMU 8) is used to incinerate nonhazardous office wastes, including paper, wood, rags, and miscellaneous refuse. This unit is a Goder Model No. 28-N, class 3, with a multiple chamber, single burner, controlled by an afterburner and wet scrubber. Both burners are rated at 800,000 British Thermal Units (BTU). This unit is an approximately 15-foot high by 10-foot long by 8-foot wide steel, gas-fired structure. This unit operates three hours per day, five days per week and burns 200 pounds per hour.

The Drum Storage Area (SWMU 9) is used to store all wastes generated at the facility except aluminum and lead dross, oil-coated scrap metal, and nonhazardous office wastes. Wastes are stored in SWMU 9 in 55-gallon drums. This area is also used to store raw materials, which include aluminum ingot, steel bar and rod stock, electrolytic steel, sheet stock, steel, bronze, bakelite gear blanks, insulated copper wire, antrification bearings, and other mechanical components. Wastes are stored here until they are moved to the Loading Dock (SWMU 10) for pick up.

The Loading Dock (SWMU 10) is used to receive all raw material coming into the facility. It is also used to load all wastes as they are picked up and taken away from the facility. Wastes are usually brought here one or two days before they are scheduled to be picked up.

Parts are cleaned during various machining processes. Cleaning is done at each work station using either a portable Safety Kleen parts washer or small steel buckets. Safety Kleen removes, recycles, and replaces the contents of these parts washers. If a bucket is used to clean parts, wastes are taken to the Drum Storage Area (SWMU 9) and emptied into 55-gallon drums which are moved to and then picked up from the Loading Dock (SWMU 10) by Safety Kleen for recycling.

The facility has been at its current location since the building was erected in 1956 and operations began in 1957. Before that, the land was used as a golf course. Bodine Electric employs about 525 people. The painting, machining, and die casting operations run three shifts seven days a week; all other operations run one day-shift Monday through Friday. Facility operations are generally the same as they were when operations began in 1957.

Facility SWMUs are identified in Table 1. The facility layout, including SWMUs, is shown in Figure 2. Solid waste generated from facility operations and the SWMUs where they are managed are discussed in detail in Section 2.3.

2.3 WASTE GENERATING PROCESSES

The primary waste streams generated at the Bodine Electric facility are aluminum and lead dross (D008), rust inhibitor (D001), nonhazardous water-based coolant, waste oil (D001), nonhazardous oil-coated scrap metal, paint sludge (F005), varnishing waste (D001), and nonhazardous office wastes. Spent mineral spirits (D001), spent methylene chloride (F001), and

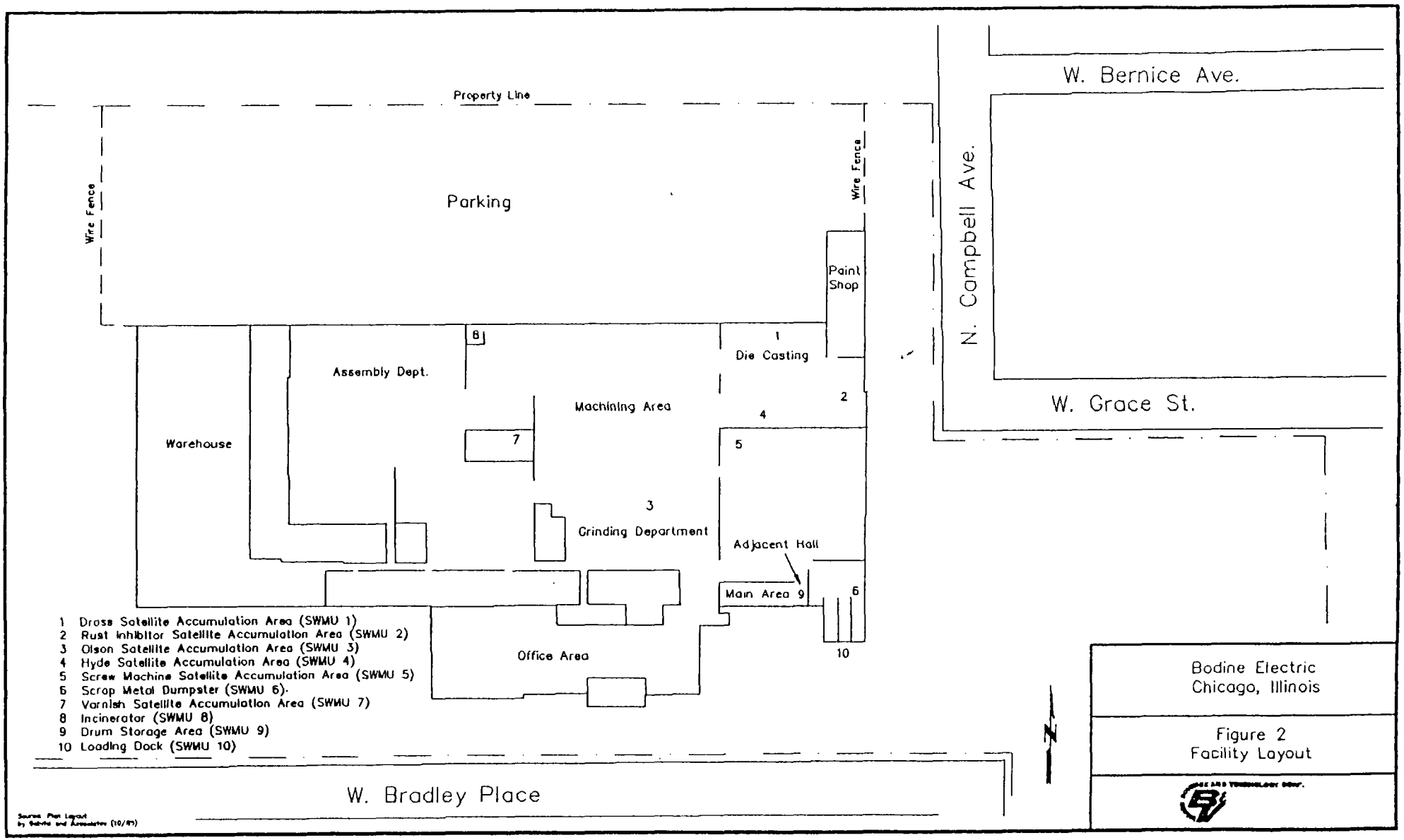
TABLE 1

SOLID WASTE MANAGEMENT UNITS (SWMU)

SWMU Number	SWMU Name	RCRA Hazardous Waste Management Unit *	Status
1	Dross Satellite Accumulation Area	No	Active
2	Rust Inhibitor Satellite Accumulation Area	No	Active
3	Olson Satellite Accumulation Area	No	Active
4	Hyde Satellite Accumulation Area	No	Active
5	Screw Machine Satellite Accumulation Area	No	Active
6	Scrap Metal Dumpster	No	Active
7	Varnish Satellite Accumulation Area	No	Active
8	Incinerator	No	Active
9	Drum Storage Area	Yes	RCRA-closed; currently used for less than 90-day storage of waste.
10	Loading Dock	No	Active

Note:

* A RCRA hazardous waste management unit is one that currently requires or formerly required submittal of a RCRA Part A or Part B permit application.


Property Line
Wire Fence
Wire Fence
Parking
Paint Shop
W. Bernice Ave.
N. Campbell Ave.
W. Grace St.
8
1
Die Casting
Assembly Dept.
Machining Area
2
4
Warehouse
7
5
3
Grinding Department
Adjacent Hall
Main Area 9
6
10
Office Area
1 Dross Satellite Accumulation Area (SWMU 1)
2 Rust Inhibitor Satellite Accumulation Area (SWMU 2)
3 Olson Satellite Accumulation Area (SWMU 3)
4 Hyde Satellite Accumulation Area (SWMU 4)
5 Screw Machine Satellite Accumulation Area (SWMU 5)
6 Scrap Metal Dumpster (SWMU 6)
7 Varnish Satellite Accumulation Area (SWMU 7)
8 Incinerator (SWMU 8)
9 Drum Storage Area (SWMU 9)
10 Loading Dock (SWMU 10)
W. Bradley Place
N
Bodine Electric
Chicago, Illinois
Figure 2
Facility Layout

spent trichloroethylene (F001) are generated from parts washers or buckets. Safety Kleen in Chicago, Illinois maintains the parts washers. Buckets of spent mineral spirits, spent methylene chloride, and spent trichloroethylene are emptied into drums in the Drum Storage Area (SWMU 9). Wastes are generated during the production of fractional horsepower AC and DC motors, gear motors, and electronic speed control equipment. Wastes generated at the facility are discussed below and summarized in Table 2.

Die casting consists of melting down metal parts in automatic, gas-fired crucibles. This process generates aluminum and lead dross (D008). Five die cast machines are located in the die casting room at the northeastern part of the facility. The die cast machines operate at 1,250°F. There is a 2-foot-square, 6-to 8-inch deep metal drop pan for each of the die cast machines in this area. Waste aluminum and lead dross (D008) falls into the drop pans, cools, and is emptied into either 55-gallon drums or 4-cubic-foot steel containers. Waste is accumulated and temporarily stored in the Dross Satellite Accumulation Area (SWMU 1) then transported to the Loading Dock (SWMU 10) for pick up and recycling by Scimitar in Highland Park, Illinois. About two 55-gallon drums of this waste are generated weekly.

The coating process consists of spray coating parts in automatic indexing, baffle-controlled spray booths. This process generates rust inhibitor (D001). Rust inhibitor is pumped from the booth through flexible, plastic tubing into a 55-gallon drum in the Rust Inhibitor Satellite Accumulation Area (SWMU 2). The drum lies on the concrete floor in an approximately 25-square-foot room at the northeastern part of the facility. After accumulation and temporary storage in this area, the drum is transported to and stored in the Drum Storage Area (SWMU 9). When this waste is ready to be picked up for recycling by Safety Kleen, it is moved to the Loading Dock (SWMU 10). About one to two 55-gallon drums of this waste are generated every three months.

The Olson unit, in the grinding department at the south central end of the machining area, generates a paper filter of nonhazardous water-based coolant which is cut, crushed, and put into a satellite drum. This waste is accumulated and temporarily stored in the Olson Satellite Accumulation Area (SWMU 3). When a drum is full and ready for disposal, the drum is moved to the Loading Dock (SWMU 10) and the contents are dumped in 4-cubic-foot steel containers. The paper filters are dumped into a dumpster with regular garbage and the steel containers are retained for reuse. About three to four of these steel containers are disposed of per week.

TABLE 2

SOLID WASTES

Waste/EPA Waste Code	Source	Primary Management Unit *
Aluminum and Lead Dross/(D008)	Die Casting	1 and 10
Rust Inhibitor (D001)	Spray Coating	2, 9, and 10
Water-Based Coolant/NA**	Olson Recycler	3 and 10
Waste Oil (D001)	Hyde Recycler; Machining Processes	4, 9, and 10
Oil-Coated Scrap Metal/NA	Machining Processes	5 and 6
Paint Sludge (F005)	Painting Operation	9 and 10
Varnishing Waste (D001)	Varnishing Operation	7, 9, and 10
General Office Wastes/NA	General Facility Operations	8
Spent Mineral Spirits (D001)	Parts Washing	9 and 10
Spent Methylene Chloride (F001)	Parts Washing	9 and 10
Spent Trichloroethylene (F001)	Parts Washing	9 and 10

Notes:

* Primary management unit refers to a SWMU that currently manages or formerly managed the waste.

** Nonapplicable (NA) designates nonhazardous waste.

The Hyde recycling system extracts machining oil from coolant. The coolant is recycled back into the machining process. This process generates waste oil (D001). This waste is accumulated and temporarily stored in 55-gallon drums in the Hyde Satellite Accumulation Area (SWMU 4) at the northeastern part of the facility. Full drums are transported to and stored in the Drum Storage Area (SWMU 9). When this waste is ready to be picked up for recycling by Safety Kleen, it is moved to the Loading Dock (SWMU 10). About 10 to 15 55-gallon drums of this waste are generated every three months.

Machining operations result in the disposal of metal pieces. This process generates nonhazardous oil-coated scrap metal. This waste is generated in the machining area at the middle and northeastern part of the facility. The oil-coated scrap metal is put into a screw machine chip spinner at the southeastern part of the facility to remove the oil from the metal. About 90 percent of the oil is removed from the metal chips and reused onsite. The oil-coated scrap metal is temporarily stored in the Screw Machine Satellite Accumulation Area (SWMU 5), consisting of a 55-gallon drum, then transported to and dumped into the Scrap Metal Dumpster (SWMU 6). About one dumpster is picked up by Midwest Metals in Chicago, Illinois for recycling every month.

Painting parts is done in the paint shop at the northeastern corner of the facility. This process generates paint sludge (F005) which is containerized in 55-gallon drums and stored in the Drum Storage Area (SWMU 9). When this waste is ready to be picked up for recycling by Safety Kleen, it is moved to the Loading Dock (SWMU 10).

Varnishing operations consist of dip coating parts in the trickle varnish machines. This process generates varnishing waste (D001). This waste is poured into drums through funnels inserted in the drum openings. This waste is accumulated and temporarily stored in 55-gallon drums in the Varnish Satellite Accumulation Area (SWMU 7) just west of the machining area at the middle of the facility. When full, a drum is transported to the Drum Storage Area (SWMU 9). When this waste is ready to be picked up for recycling by Safety Kleen, it is moved to the Loading Dock (SWMU 10). About two 55-gallon drums are generated every 3 months.

This facility has an Incinerator (SWMU 8) located at the north central part of the main building between the assembly department and machine area. This unit burns nonhazardous office wastes, including paper, wood, rags, and miscellaneous office refuse. This unit is a Goder Model No. 28-N, class 3, with a multiple chamber, single burner, controlled by an afterburner and

wet scrubber. Both burners are rated at 800,000 British Thermal Units (BTU). This unit is an approximately 15-foot high by 10-foot long by 8-foot wide steel structure. This unit operates three hours per day, five days per week and burns 200 pounds of nonhazardous general office waste per hour.

Parts are cleaned during various machining processes. Cleaning is done at each work station using either a portable Safety Kleen parts washer or small steel buckets that generate spent mineral spirits (D001), spent methylene chloride (F001), and spent trichloroethylene (F001). Safety Kleen removes, recycles, and replaces the contents of the parts washers. If a bucket is used to clean parts, the waste is taken to the Drum Storage Area (SWMU 9) and emptied into 55-gallon drums which are moved to and picked up from the Loading Dock (SWMU 10) by Safety Kleen for recycling. Approximately six to 10 55-gallon drums are generated per year.

2.4 HISTORY OF DOCUMENTED RELEASES

This section discusses the history of documented releases to ground water, surface water, air, and on-site soils, at the Bodine Electric facility.

One release has been documented at the Bodine Electric facility. This release occurred in May 1991, while an employee was dumping oil-coated scrap metal into the Scrap Metal Dumpster (SWMU 6) (Bodine, 1992). An undetermined amount of oil, which contained trace amounts of lead, leaked into a floor drain discharging to the sanitary sewer. This was caused by an employee who did not remove the lead-carrying cutting oils from the metal chips, enabling the oils to leak onto the floor and into the drain. An 18-inch high concrete barrier was built around the drain and absorbent materials were put in the drain to prevent oils from escaping into the sewer system in the future. Water in the drain was sampled and the incident was absolved by the Metropolitan Water Reclamation District of Greater Chicago (MWRD, 1992).

2.5 REGULATORY HISTORY

Bodine Electric submitted a Notification of Hazardous Waste Activity to EPA on August 15, 1980 (USEPA, 1980a). This notification listed F001-F003, F017, U239, U228, U159, U210, and U080 hazardous wastes handled by the facility. Bodine Electric submitted a RCRA Part A Permit Application on November 17, 1980 (USEPA, 1980b). The application listed the following process codes and capacities: container storage (S01) 1,100 gallons. The application

listed the following pairs of wastes: F001/U228, F002/U080, F003/U239, F017/F018, F005/U159, U210, D001, and D006/D008 (Bodine, 1980).

The container storage area was RCRA closed in 1986 as an area of hazardous waste storage for longer than 90 days, in accordance with the approved closure requirements of Interim Status Standards 35 Illinois Administrative Code, Part 725 (40 CFR Part 265) (IEPA, 1987). Closure activities involved removal of all hazardous wastes in storage, decontamination and rinsing of the storage area, and sampling and analysis of the rinsate (IEPA, 1986). IEPA approved closure on October 5, 1987. The facility currently operates as a large-quantity generator of hazardous waste storing wastes for less than 90 days.

In the past, Bodine Electric has had RCRA compliance problems. RCRA inspections were conducted by IEPA on October 19, 1982, and July 18, 1985. Violations noted in these inspections included no written schedule of inspection for equipment, no written operating record, personnel training inadequacies, no waste analysis plan, an inadequate contingency plan, and no weekly inspections (IEPA, 1982, 1985a). No record of subsequent compliance regarding these violations was available.

The facility has permits to operate the following emission sources and/or air pollution control equipment: boilers; crucible furnaces; waterwash paint booths; soldering areas; gear cutters; grinders; polishers; belt sanders; varnish drying ovens; and one parts dryer, parts washer, degreaser, epoxy booth, varnish trickle machine, paint drying oven, incinerator, melting pot, preheat and annealing furnace, acid varnish stripper, rotor undercutter, drilling/tapping machine with rotocyclones, and electrostatic epoxy applicator with dust collector.

Bodine Electric has had two occurrences of problems regarding air emissions. In February 1973, an EPA investigation of Bodine Electric was conducted and residents in the area of the facility were asked for their observations. All complained of smoke and odors from the facility and were willing to testify. Enforcement action was recommended (IEPA, 1973). No further information regarding this investigation was available. In September 1985, the following air permit violations were noted: failure to secure current operating permit, failure to keep a maintenance record for air pollution control equipment, and failure to submit a fugitive dust operating program for the parking lot (IEPA, 1985c). No further information regarding this investigation was available.

The facility is not required to have a National Pollutant Discharge Elimination System (NPDES) permit. There have been no CERCLA or leaking underground storage tank (LUST) activities at this site.

2.6 ENVIRONMENTAL SETTING

This section describes the climate, flood plain and surface water, geology and soils, and ground water in the vicinity of the Bodine Electric facility.

2.6.1 Climate

The climate in Cook County is classified as humid continental type (USDA, 1979). The annual average daily maximum temperature is 58°F and the annual average daily minimum temperature is 39.7°F (NWB, 1991). The average precipitation from 1958 to 1990 was 33.3 inches per year, and the highest 24-hour rainfall was 9.3 inches in August 1987 (NWB, 1991). The overall wind direction varies seasonally with an average wind speed of 10.3 miles per hour (mph).

2.6.2 Flood Plain and Surface Water

The Bodine Electric facility is located in a non-flood prone area (FEMA, 1981). The nearest surface water body, the North Branch of the Chicago River, is located 1/8 mile east of the facility, and is used primarily for industrial purposes. Facility personnel stated that all surface-water drainage, industrial waste water, and floor drains are routed to the sanitary sewer.

2.6.3 Geology and Soils

The soil types over much of Cook County have not been mapped in detail by the U.S. Department of Agriculture (USEPA, 1979) because of obscuring urban land use. However, their report contains a regional soil map that classifies the soil near Bodine Electric as level, poorly drained silty and clayey soils formed in glacial lake sediment (USDA, 1979).

The sediment and rock occurrence expected at the facility is an unknown thickness of unconsolidated sediments originating from Pleistocene glacial action (ponded-water clays, tills, and outwash) overlying bedrock composed of sedimentary rock units of Paleozoic age. No site-specific information is currently available about the character of either the unconsolidated

materials or the bedrock. However, Berg and Kempton (1988) have used data from the Illinois State Geological Survey's extensive collection of well logs to prepare a series of maps which generally indicate the probable occurrence of sediments and/or bedrock within the interval from the surface to 50 feet in depth. For the area around the Bodine Electric facility, they indicate a probability of a 20-foot deep silty clayey till overlying Silurian dolomite. The bedrock surface is expected between 20 and 50 feet below ground surface.

2.6.4 Ground Water

No site-specific hydrogeologic information is available. Therefore, no statements may be made regarding the depth to the water table, ground-water flow rates or directions, or the arrangement of aquifers and aquitards beneath the site. Well usage in the vicinity is described in Section 2.7.

In northeastern Illinois, ground water for public and industrial use is or has been obtained from four different water-producing zones within the geologic secession. The first zone is the ground water occurring within the unconsolidated Pleistocene sediments. The second zone is an interval of shallow bedrock units, which are generally in contact with the Pleistocene sediments. The third and fourth zones are two deeper intervals of water-producing rock units. Hughes and others (1966) discuss the character of each of the four zones, their hydrologic properties and the location of their recharge zones. Virtually all wells producing municipal or industrial water within the Greater Chicago area pump from one or both of the deep bedrock aquifer zones (Bergstrom and others, 1955).

The shallow bedrock zone in northeastern Illinois underlies the glacial sediments and is mainly comprised of Silurian dolomite. The upper boundary of this zone is the erosional surface of the bedrock, which is commonly obscured by glacial sediments, and the lower boundary is the upper Ordovician Maquoketa Shale. Water produced from the dolomite is obtained from fractures and solution openings (Hughes and others, 1966). The shallow bedrock aquifer zone receives some recharge from precipitation (Hughes and others, 1966).

The deep bedrock aquifer zones include the Cambrian-Ordovician aquifer and the Mt. Simon aquifer (Hughes and others, 1966). The Cambrian-Ordovician aquifer contains two major zones, the Glenwood-St. Peter aquifer and the Ironton-Galesville aquifer. The top of the Cambrian-Ordovician zone is the Galena-Platteville Dolomite. The Glenwood-St. Peter aquifer is

widely utilized where water requirements are less than 200 gallons per minute (gpm). This unit has a hydraulic conductivity between 9 and 15 gallons per day per square foot (gpd/sq.ft.). The Ironton-Galesville Sandstone aquifer has a hydraulic conductivity between 30 and 40 gpd/sq.ft. Recharge to the deep bedrock aquifers is mostly from west and north of the six county metropolitan area, where rocks crop out at the surface or lie immediately below the glacial drift. Minor recharge occurs as leakage through the shallow bedrock aquifer system.

The Mt. Simon aquifer is bounded above by the relatively impermeable shales and siltstones of the upper and middle Eau Claire Formation and below by pre-Cambrian basement rock. The average hydraulic conductivity of this aquifer is 16 gpd/sq.ft. (Hughes and others, 1966) and recharge is largely from the outcrop region of Cambrian rocks in south-central Wisconsin (Willman, 1971).

2.7 RECEPTORS

The Bodine Electric facility occupies 11 acres in an industrial and residential area in Chicago, Illinois. Chicago has a population of about 2,800,000.

The facility is bordered on the north by a park and a parking lot, on the south by WGN television studios, on the east by residences and a parking lot, and on the west by an industrial park. The nearest school, Lane Technical High School, is located about 1/4 mile south of the facility. There is fencing at the northern side of the building, but it does not surround the property nor prevent access onto the property. Facility access is controlled by a security guard during the second and third shifts.

The nearest surface-water body, the North Branch of the Chicago River, is 1/8 mile west of the facility and is used primarily for industrial purposes. There are no other significant surface-water bodies within 2 miles of the facility.

Ground water is not used as a drinking-water supply. The location of the nearest drinking-water well is unknown. Lake Michigan, located approximately 4 miles east of the facility, is the drinking-water source for Chicago. Sensitive environments are not located onsite. The nearest wetland is located 1/8 mile west of the facility.

3.0 SOLID WASTE MANAGEMENT UNITS

This section describes the 10 SWMUs identified during the PA/VSI. The following information is presented for each SWMU: description of the unit, dates of operation, wastes managed, release controls, history of documented releases, and BVWST observations.

SWMU 1 **Dross Satellite Accumulation Area**

Unit Description: The Dross Satellite Accumulation Area is located indoors, above ground, in the die casting area, at the northeastern part of the facility. The die casting area is an approximately 75-foot wide by 200-foot long room with brick walls and a concrete floor. This unit is used to accumulate aluminum and lead dross (D008). There is a 2-foot-square, 6- to 8-inch deep drop pan for each of the five die cast machines in this area. Waste dross falls into the drop pans, cools, and is emptied or shoveled into either 55-gallon drums or 4-cubic-foot steel containers. The drums and steel containers always remain on the concrete floor near the die cast machines at the far northern end of the room until they are moved to be picked up from the Loading Dock (SWMU 10). The drums and containers remain open and are not labeled. No floor drains are in the area. (See Photograph No 1).

Date of Startup: The startup date for this SWMU is unknown but assumed to be when facility operations began in 1957.

Date of Closure: This unit is active.

Wastes Managed: This unit manages aluminum and lead dross (D008). When the drums or steel containers are full, or before 90 days, they are put on an approximately 5-inch high metal skid, lifted by a forklift machine, and transported to the Loading Dock (SWMU 10) for pick up and recycling by Scimitar in Highland Park, Illinois.

Release Controls:	Absorbent materials, pads, and clay are kept between this area and the Rust Inhibitor Satellite Accumulation Area (SWMU 2) and can be used to contain any spills that may occurs. This unit does not store wastes greater than 90 days.
History of Documented Releases:	No releases from this SWMU are documented.
Observations:	A 55-gallon drum was approximately half full of aluminum and lead dross at the time of the VSI. The drum was on a metal skid ready to be transported with the forklift machine to the Loading Dock (SWMU 10). The drum was open and in good condition. No cracks were visible on or around the concrete floor. No evidence of release was noted.

SWMU 2 **Rust Inhibitor Satellite Accumulation Area**

Unit Description:	The Rust Inhibitor Satellite Accumulation Area is located indoors, above ground, at the northeastern part of the facility, just north of the paint room. This area consists of a 55-gallon drum. Rust inhibitor (D001) is generated in an automatic indexing, baffle-controlled spray booth and is pumped from the booth through flexible plastic tubing into the drum. The drum remains on the concrete floor at the western side of the room. Rust inhibitor is accumulated in this area before it is moved to the Drum Storage Area (SWMU 9). (See Photograph No. 2).
Date of Startup:	This unit began operation in 1970.
Date of Closure:	This unit is active.
Wastes Managed:	This unit manages rust inhibitor (D001). When a drum is full, or before 90 days, it is put on an approximately 5-inch high metal skid, lifted by a forklift machine, and transported to the Drum

Storage Area (SWMU 9). When this waste is ready to be picked up for recycling by Safety Kleen in Chicago, Illinois, it is moved to the Loading Dock (SWMU 10).

Release Controls: Absorbent materials, pads, and clay are kept indoors between this area and the Dross Satellite Accumulation Area (SWMU 1) and can be used if a spill occurs.

History of Documented Releases: No releases from this SWMU are documented.

Observations: This unit contained one drum that was in good condition, showing no visible signs of cracks or leakage. No cracks were visible on the concrete floor. No evidence of release was noted.

SWMU 3 **Olson Satellite Accumulation Area**

Unit Description: The Olson Satellite Accumulate Area is located indoors, above ground, in the grinding department at the south central end of the machining area. This area consists of a 55-gallon drum. Paper filters saturated with nonhazardous water-based coolant are generated in an approximately 8-foot high by 7-foot long by 5-foot wide Olson unit. The paper filters are cut, crushed, and thrown into the satellite drum before being transported to the Loading Dock (SWMU 10). The drum remains open on the concrete floor and is not labeled. A floor drain lies next to this unit. (See Photograph No. 3).

Date of Startup: This unit began operation in 1960.

Date of Closure: This unit is active.

Wastes Managed: This unit manages paper filter saturated with nonhazardous water-based coolant which is cut, crushed, and thrown into the satellite

drum. When full, or before 90 days, the drum is moved to the Loading Dock (SWMU 10) and the contents of the drum are dumped in 4-cubic-foot steel containers. The paper filters are dumped into a dumpster and the steel containers are retained for reuse.

Release Controls: Absorbent materials, pads, and clay are kept indoors near this area and can be used if a spill occurs.

History of Documented Releases: No releases from this SWMU are documented.

Observations: This unit contained one drum that was in good condition, showing no visible signs of cracks or leaks. No cracks were visible on the concrete floor. No evidence of release was noted.

SWMU 4 **Hyde Satellite Accumulation Area**

Unit Description: The Hyde Satellite Accumulation Area is located indoors, above ground, in the die casting area at the northeastern area of the building. This area consists of a 55-gallon steel drum. Waste oil (D001) is generated in an approximately 12-foot long, 5-foot wide, 5-foot deep Hyde unit which extracts the waste oil directly into the drum. The drum remains on the concrete floor next to the Hyde unit until it is moved to the Drum Storage Area (SWMU 9). When this waste is ready to be picked up for recycling by Safety Kleen in Chicago, Illinois, it is moved to the Loading Dock (SWMU 10).

Date of Startup: This unit began operation in 1986.

Date of Closure: This unit is active.

Wastes Managed: The Hyde unit manages waste oil (D001) which is extracted directly into a satellite drum. When full, or before 90 days, the drum is put

on an approximately 5-inch high metal skid, lifted by a forklift machine, and transported to the Drum Storage Area (SWMU 9). When this waste is ready to be picked up for recycling by Safety Kleen in Chicago, Illinois, it is moved to the Loading Dock (SWMU 10).

Release Controls: Absorbent materials, pads, and clay are kept indoors near this area and can be used if a spill occurs.

History of Documented Releases: No releases from this SWMU are documented.

Observations: This unit contained a drum that was in good condition, showing no visible signs of cracks or leakage. No cracks were visible on the concrete floor. No evidence of release was noted.

SWMU 5 **Screw Machine Satellite Accumulation Area**

Unit Description: The Screw Machine Satellite Accumulation Area is located indoors, above ground, adjacent to the Loading Dock (SWMU 10), at the southeastern part of the facility. This area consists of a 55-gallon steel drum. Nonhazardous oil-coated scrap metal from machining operations is put into a screw machine chip spinner to separate the oil from the metal. About 90 percent of the oil is removed from the metal. The oil is retained and reused onsite. The scrap metal is placed in the satellite drum, which remains on the concrete floor near the chip spinner. When full, the drums are moved to the Loading Dock and dumped into the Scrap Metal Dumpster (SWMU 6). (Because this SWMU was not identified until after the VSI, there is no photograph of this SWMU).

Date of Startup: The startup date for this unit is unknown but assumed to be when facility operations began in 1957.

Date of Closure:	This unit is active.
Wastes Managed:	This unit manages nonhazardous oil-coated scrap metal. Facility personnel explained that about 90 percent of the oil on scrap metal is removed in the screw machine chip spinner. When full, or before 90 days, drums are put on an approximately 5-inch high metal skid, lifted by a forklift machine, and transported to the Scrap Metal Dumpster (SWMU 6) for pick up and recycling by Midwest Metals in Chicago, Illinois.
Release Controls:	Absorbent materials, pads, and clay are kept indoors near this area and can be used if a spill occurs.
History of Documented Releases:	No releases from this SWMU are documented.
Observations:	This unit was in good condition, with no visible signs of cracking or leakage. No cracks were visible on or around the concrete floor. No evidence of release was noted.

SWMU 6	**Scrap Metal Dumpster**
Unit Description:	The Scrap Metal Dumpster is located indoors, above ground, against the eastern wall of the Loading Dock (SWMU 10) at the southeastern corner of the facility. This unit is an approximately 20-cubic-yard metal structure. Drums of nonhazardous oil-coated scrap metal from the Screw Machine Satellite Accumulation Area (SWMU 5) are brought by forklift to the Loading Dock (SWMU 10) and emptied into the dumpster. The dumpster remains open on the concrete floor until it is hauled off by Midwest Metals for recycling. (See Photograph No 5).
Date of Startup:	The startup date for this unit is unknown but assumed to be when plant operations began in 1957.

Date of Closure:	The unit is active.
Wastes Managed:	This unit manages nonhazardous oil-coated scrap metal from various machining operations at the plant. Facility personnel explained that about 90 percent of the oil on scrap metal is removed in the screw machine chip spinner in the Screw Machine Satellite Accumulation Area (SWMU 5). Midwest Metals in Chicago, Illinois picks up and recycles the oil-coated scrap metal.
Release Controls:	Release controls for this unit include absorbent materials under a drain which is indoors, perpendicular to the dumpster running east to west along the northern wall of the Loading Dock. There is also an 8-inch high concrete barrier around the drain to prevent any leakage that may occur from reaching the floor drain.
History of Documented Releases:	In May 1991, oil containing traces of lead leaked into the floor drain, discharging to the sanitary sewer. The water in the drain was sampled and the incident was absolved by the Metropolitan Water Reclamation District of Greater Chicago (MWRD, 1992).
Observations:	This unit contained oil-coated scrap metal. The unit was in good condition, with no visible signs of cracking or leakage. No cracks were visible on the concrete floor. No evidence of release was noted.

SWMU 7 **Varnish Satellite Accumulation Area**

Unit Description:	The Varnish Satellite Accumulation Area is located indoors, above ground, just west of the machining area at the middle section of the facility. This unit is located in a room that is approximately 8-square-feet with brick walls and a concrete floor. There is a steel door on the southern wall which is kept closed. Varnishing waste (D001) is accumulated in this unit before it is moved to the Drum

	Storage Area (SWMU 9). Varnishing waste is put into 55-gallon steel drums placed along the western wall of the room. The waste is poured through funnels inserted in the drum openings. The drums are closed, unless a funnel is inserted in their openings, and they remain on the concrete floor until they are moved. Drums are labeled with contents and hazard information. (See Photograph No. 6).
Date of Startup:	The startup date for this unit is unknown but assumed to be when facility operations began in 1957.
Date of Closure:	This unit is active.
Wastes Managed:	This unit manages varnishing waste (D001). When a drum is full, or before 90 days, it is put on an approximately 5-inch high metal skid, lifted by a forklift machine, and transported to the Drum Storage Area (SWMU 9). When this waste is ready to be picked up for recycling by Safety Kleen in Chicago, Illinois, it is moved to the Loading Dock (SWMU 10).
Release Controls:	Absorbent materials, pads, and clay are kept indoors at the northeastern part of the facility and can be used to contain wastes if a spill occurs.
History of Documented Releases:	No releases from this SWMU are documented.
Observations:	This unit contained two drums that were in good condition, showing no visible signs of cracks or leakage. No cracks were visible on the concrete floor. No evidence of release was noted.

SWMU 8	**Incinerator**
Unit Description:	The Incinerator is located in the north central portion of the main building, between the assembly department and machining area. This unit is a Goder Model No. 28-N, class 3, with a multiple chamber, single burner, controlled by an afterburner and wet scrubber. Both burners are rated at 800,000 British Thermal Units (BTU). This unit is an approximately 15-foot high by 10-foot long by 8-foot wide steel structure. This unit operates three hours per day, five days per week and burns 200 pounds of nonhazardous general office waste per hour. This unit lies on a concrete floor. (See Photograph No. 6).
Date of Startup:	The startup date for this unit is unknown but assumed to be when facility operations began in 1957.
Date of Closure:	This unit is active.
Wastes Managed:	This unit incinerates nonhazardous general office wastes, including paper, wood, rags, and miscellaneous office refuse.
Release Controls:	This unit has a wet scrubber to minimize exhaust emissions.
History of Documented Releases:	No releases from this SWMU have been documented.
Observations:	This unit was not in operation during the VSI. This unit showed no visible signs of cracking or releases. No cracks were visible on the concrete floor. No evidence of release was noted.

SWMU 9	**Drum Storage Area**
Unit Description:	The Drum Storage Area is located indoors, above ground, west of the Loading Dock (SWMU 10), at the southeastern part of the facility. This SWMU consists of a main area with an adjacent hallway. The main area is an approximately 25-foot by 50-foot room opening into the adjacent hallway measuring approximately 30 feet by 10 feet. The entire Drum Storage Area has a concrete floor and is used to store all wastes generated at the facility except aluminum and lead dross, scrap metal, and general office wastes. It also stores raw material the facility receives. All wastes are stored in 55-gallon drums. A sign on the eastern wall of the adjacent hallway designates waste oil drums. There is no designated place for the other waste groups. Waste drums are labeled according to the wastes they contain and are stored on the concrete floor or on steel racks, according to available space. The main area has floor drains in the center and southwestern corner, which lead to the sanitary sewer system. Waste drums are moved to the Loading Dock by forklift when they are to be picked up. (See Photograph Nos. 8 and 9).
Date of Startup:	The startup date for this unit is unknown but assumed to be when facility operations began in 1957.
Date of Closure:	This unit is RCRA closed. RCRA closure occurred in 1986 and was approved by IEPA in 1987. This unit is now used to store hazardous waste for less than 90 days.
Wastes Managed:	This unit manages rust inhibitor (D001), waste oil (D001), paint sludge (F005), varnishing waste (D001), spent mineral spirits (D001), spent methylene chloride (F001), and spent trichloroethylene (F001). All drums are moved to the Loading Dock (SWMU 10) by forklift for pick and recycling by Safety Kleen in Chicago, Illinois.

Release Controls:	Absorbent materials, pads, and clay are kept nearby and can be used to contain wastes if a spill occurs.
History of Documented Releases:	No releases from this SWMU are documented.
Observations:	This unit had approximately 25 drums of waste during the VSI. The drums were sealed and in good condition with no evidence of leakage. No cracks were visible on or around the concrete floor. No evidence of release was noted.

SWMU 10	**Loading Dock**
Unit Description:	The Loading Dock is located indoors, above ground, at the far southeastern corner of the facility. The floor is concrete and brick walls surround the northern, eastern, and western sides; the southern side is open. This unit is used to unload raw materials being brought into the facility. It is also used to temporarily store wastes just before they are picked up and taken away from the facility. Initially, most wastes are stored in the Drum Storage Area (SWMU 9) then moved to the Loading Dock for pick up.
Date of Startup:	The startup date for this unit is unknown but assumed to be when plant operations began in 1957.
Date of Closure:	This unit is active.
Wastes Managed:	This unit manages aluminum and lead dross (D008), rust inhibitor (D001), nonhazardous water-based coolant, waste oil (D001), paint sludge (F005), varnishing waste (D001), spent mineral spirits (D001), spent methylene chloride (F001), and spent trichloroethylene (F001). All wastes generated at the facility are moved to the loading dock for pick up.

Release Controls:	Release controls for this unit include absorbent materials under a drain which is perpendicular to the Scrap Metal Dumpster (SWMU 6) running east to west along the northern wall. There is also an eight-inch high concrete barrier around the drain to prevent any spills that may occur from reaching the floor drain.
History of Documented Releases:	No releases from this SWMU have been documented.
Observations:	No cracks were visible on or around the concrete floor. No evidence of release was noted.

4.0 AREAS OF CONCERN

BVWST did not identify any AOCs during the PA/VSI.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified 10 SWMUs at the Bodine Electric facility. Background information on the facility's location, operations, waste generating processes, history of documented release, regulatory history, environmental setting, and receptors is presented in Section 2.0. SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, history of documented releases, and observed condition, is presented in Section 3.0. Following are BVWST's conclusions and recommendations for each SWMU. Table 3 summarizes the SWMUs at the Bodine Electric facility and recommended further actions.

SWMU 1 **Dross Satellite Accumulation Area**

Conclusions: This unit is indoors with no cracks visible on drums or on the concrete floor. Absorbent materials are stored nearby in the event of a spill. This unit does not store wastes for more than 90 days. This unit has a low potential for release to ground water, surface water, air, and on-site soils.

Recommendations: BVWST recommends no further action for this SWMU.

SWMU 2 **Rust Inhibitor Satellite Accumulation Area**

Conclusions: This unit is indoors with no leaks visible on drums or cracks on the concrete floor. Absorbent materials are stored nearby in the event of a spill. This unit does not store wastes for more than 90 days. This unit has a low potential for release to the ground water, surface water, air, and on-site soils.

Recommendations: BVWST recommends no further action for this SWMU.

SWMU 3 **Olson Satellite Accumulation Area**

Conclusions: This unit is indoors with no leaks visible on drums or cracks on the concrete floor. This unit does not store wastes for more than 90 days.

Absorbent materials are stored nearby in the event of a spill. This unit has a low potential for release to the ground water, surface water, air, and on-site soils.

Recommendations: BVWST recommends no further action for this SWMU.

SWMU 4 **Hyde Satellite Accumulation Area**

Conclusions: This unit is indoors with no leaks visible on drums or cracks on the concrete floor. This unit does not store wastes for more than 90 days. Absorbent materials are stored nearby in the event of a spill. This unit has a low potential for release to the ground water, surface water, air, and on-site soils.

Recommendations: BVWST recommends no further action for this SWMU.

SWMU 5 **Screw Machine Satellite Accumulation Area**

Conclusions: This unit is indoors with no leaks visible on drums or cracks on the concrete floor. This unit does not store wastes for more than 90 days. Absorbent materials are stored nearby in the event of a spill. This unit has a low potential for release to the ground water, surface water, air, and on-site soils.

Recommendations: BVWST recommends no further action for this SWMU.

SWMU 6 **Scrap Metal Dumpster**

Conclusions: This unit is indoors with no leaks on the concrete floor. In May 1991, oil containing traces of lead leaked into the floor drain, discharging to the sanitary sewer. The water in the drain was sampled and the incident was absolved by the Metropolitan Water Reclamation District of Greater

Chicago (MWRD, 1992). An 8-inch high concrete barrier was built around the drain to prevent any leakage that may occur from reaching the floor drain. Also, absorbent materials are stored nearby. This unit does not store wastes for more than 90 days. This unit has a low potential for release to the ground water, surface water, air, and on-site soils.

Recommendations: BVWST recommends no further action for this SWMU.

SWMU 7 **Varnish Satellite Accumulation Area**

Conclusions: This unit is indoors with no cracks visible on drums or on the concrete floor. This unit does not store wastes for more than 90 days. Absorbent materials are stored nearby in the event of a spill. This unit has a low potential for release to the ground water, surface water, air, and on-site soils.

Recommendations: BVWST recommends no further action for this SWMU.

SWMU 8 **Incinerator**

Conclusions: This permitted unit is indoors with no cracks visible on the concrete floor. This unit has a low potential for release to the ground water, surface water, air, and on-site soils.

Recommendations: BVWST recommends no further action for this SWMU.

SWMU 9 **Drum Storage Area**

Conclusions: This unit is indoors with no leaks visible on drums or cracks on the concrete floor. This unit does not store wastes for more than 90 days. Absorbent materials are stored nearby in the event of a spill. This unit has

a low potential for release to the ground water, surface water, air, and on-site soils.

Recommendations: BVWST recommends no further action for this SWMU.

SWMU 10 **Loading Dock**

Conclusions: This unit is indoors with no cracks visible on the concrete floor. This unit does not store wastes for more than 90 days. Absorbent materials are stored nearby in the event of a spill. This unit has a low potential for release to the ground water, surface water, air, and on-site soils.

Recommendations: BVWST recommends no further action for this SWMU.

TABLE 3

SWMU SUMMARY

	SWMU	Dates of Operation	Evidence of Release	Recommended Further Action
1.	Dross Satellite Accumulation Area	1957-Present	None	None
2.	Rust Inhibitor Satellite Accumulation Area	1970-Present	None	None
3.	Olson Satellite Accumulation Area	1960-Present	None	None
4.	Hyde Satellite Accumulation Area	1986-Present	None	None
5.	Screw Machine Satellite Accumulation Area	1957-Present	None	None
6.	Scrap Metal Dumpster	1957-Present	None	None
7.	Varnish Satellite Accumulation Area	1957-Present	None	None
8.	Incinerator	1957-Present	None	None
9.	Drum Storage Area	1957-Present	None	None
10.	Loading Dock	1957-Present	None	None

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ATTACHMENT A

EPA PRELIMINARY ASSESSMENT FORM 2070-12

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	IL D 005 069 224

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO. OR SPECIFIC LOCATION IDENTIFIER				
Bodine Electric Company	2500 West Bradley Place				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Chicago	IL	60618	Cook		

09 COORDINATES: LATITUDE 41° 53' 45" .N | LONGITUDE 87° 41' 2" .W

10 DIRECTIONS TO SITE (Starting from nearest public road)

From Chicago Loop (Downtown): Take the Kennedy north to Western, go north on Western, go about 1/2 mile and turn left on Addison, turn right on Campbell, go a couple blocks down turn right into the parking lot, which is across the street

III. RESPONSIBLE PARTIES

01 OWNER (if known)	02 STREET (Business, mailing residential)		
Bodine Electric Company	2500 West Bradley Place		
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 TELEPHONE NUMBER**
Chicago	IL	60618	(312) 478-3515
07 OPERATOR (If known and different from owner)	**08 STREET (Business, mailing, residential)**		
Mr. Duane R. Pecci, Safety Administrator	2500 West Bradley Place		
09 CITY	**10 STATE**	**11 ZIP CODE**	**12 TELEPHONE NUMBER**
Chicago	IL	60618	(312) 478-3515

13 TYPE OF OWNERSHIP (Check one)

☒ A. PRIVATE ☐ B. FEDERAL: _____ (Agency Name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL

☐ F. OTHER _____ (Specify) ☐ G. UNKNOWN

14. OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

☐ A. RCRA 3010 DATE RECEIVED: 8 /15 /80 (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: / / (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION

☒ YES DATE 02/10/92 ☐ NO

BY (Check all that apply)

☐ A. EPA ☒ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR ☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)

CONTRACTOR NAME(S): B&V Waste Science and Technology Corp.

02 SITE STATUS (Check one)

☒ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION

1957 (BEGINNING YEAR) | Present (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Liquid chemicals, oils, and solid metals.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

A low potential release or hazard to the environment exists at this facility.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents.)

☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☒ C. LOW (Inspect on time-available basis) ☐ D. NONE (No further action needed; complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)			03 TELEPHONE NUMBER
Kevin Pierard	U.S. EPA			(312) 886-4448
04 PERSON RESPONSIBLE FOR ASSESSMENT	**05 AGENCY**	**06 ORGANIZATION**	**07 TELEPHONE NUMBER**	**08 DATE**
Tim Moody		BVWST	(312) 346-3775	June 17, 1992 (Month/Day/Year)

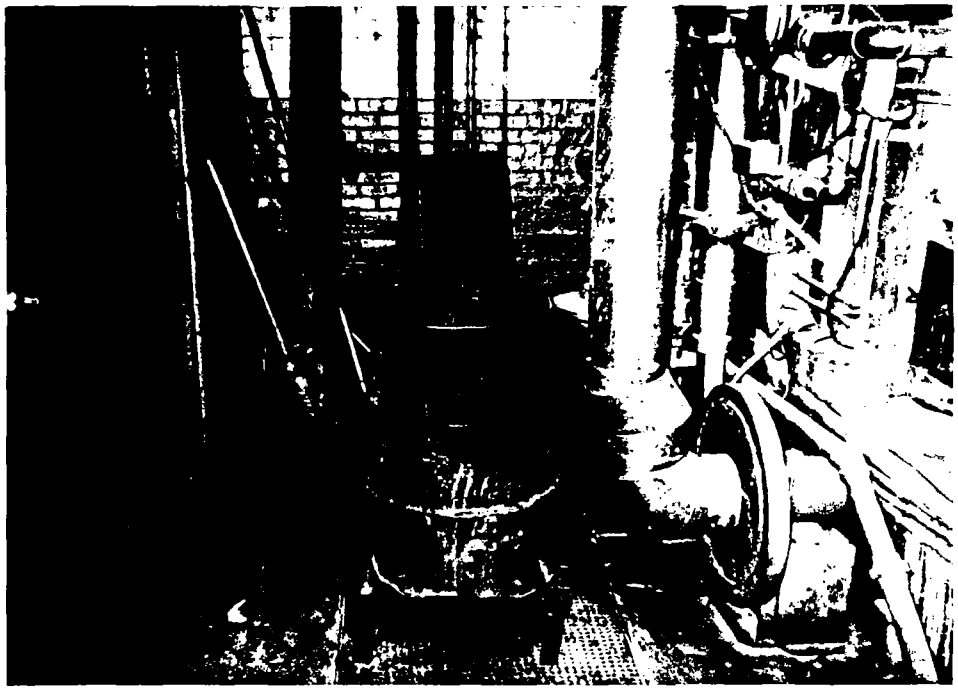
ATTACHMENT B

VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS

VISUAL SITE INSPECTION SUMMARY

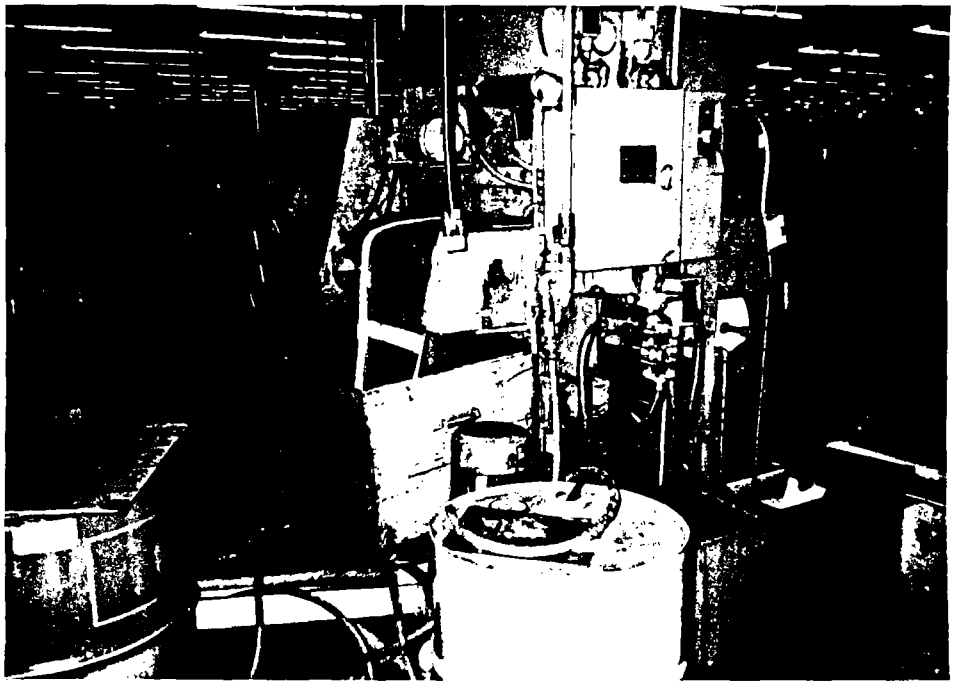
Bodine Electric
Chicago, Illinois
ILD 005 069 224

Date:	February 10, 1992
Facility Representatives:	Duane Pecci, Employee Training
Inspection Team:	Pete Wolsko, B&V Waste Science and Technology Corp. Tim Moody, B&V Waste Science and Technology Corp.
Photographer:	Pete Wolsko
Weather Conditions:	Calm, overcast, temperature about 35°F.
Summary of Activities:	The visual site inspection began at 9:00 a.m. with an introductory meeting. The inspection team discussed the purpose of the VSI and the agenda for the visit. Bodine Electric's past and present operations, solid waste management units, and release history were discussed. Most of the information was exchanged on a question-and-answer basis. The VSI tour began at 10:45 a.m. All SWMUs were viewed and photographed during the VSI. All SWMUs appeared to be in good condition with no cracks evident in the concrete floor below. No evidence of release to any media was noted. The tour concluded at 12:30 p.m., after which the inspection team held an exit meeting with the facility representative. The VSI was completed and the inspection team left the facility at 2:00 p.m.



Photograph No. 1
Orientation: North
Description: Dross Satellite Accumulation Area

Location: SWMU 1
Date: April 30, 1992

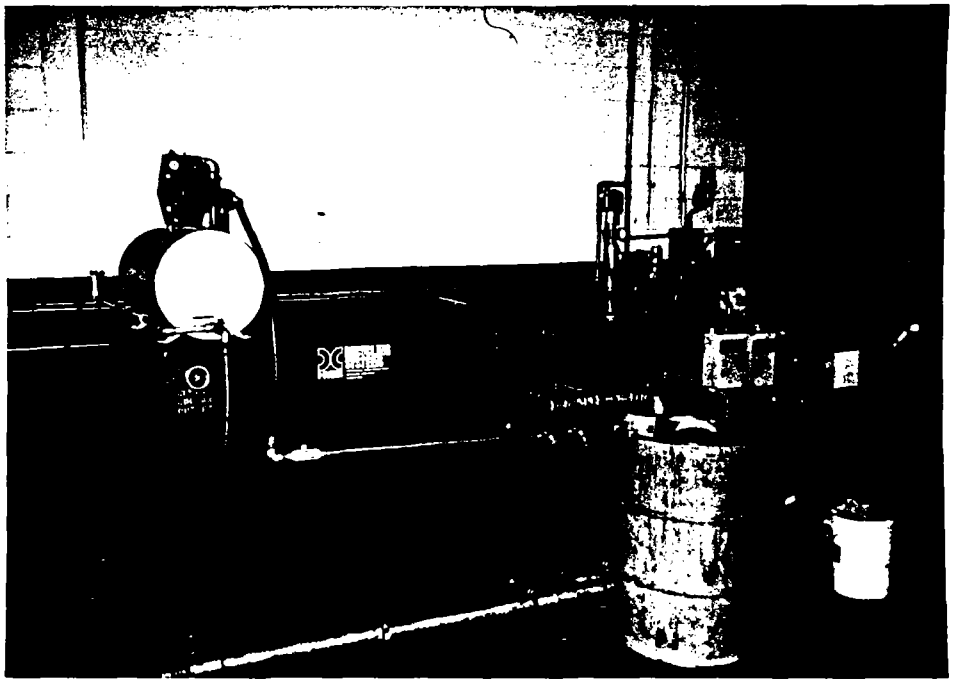


Photograph No. 2
Orientation: Northeast
Description: Rust-Inhibitor Satellite Accumulation Area

Location: SWMU 2
Date: April 30, 1992

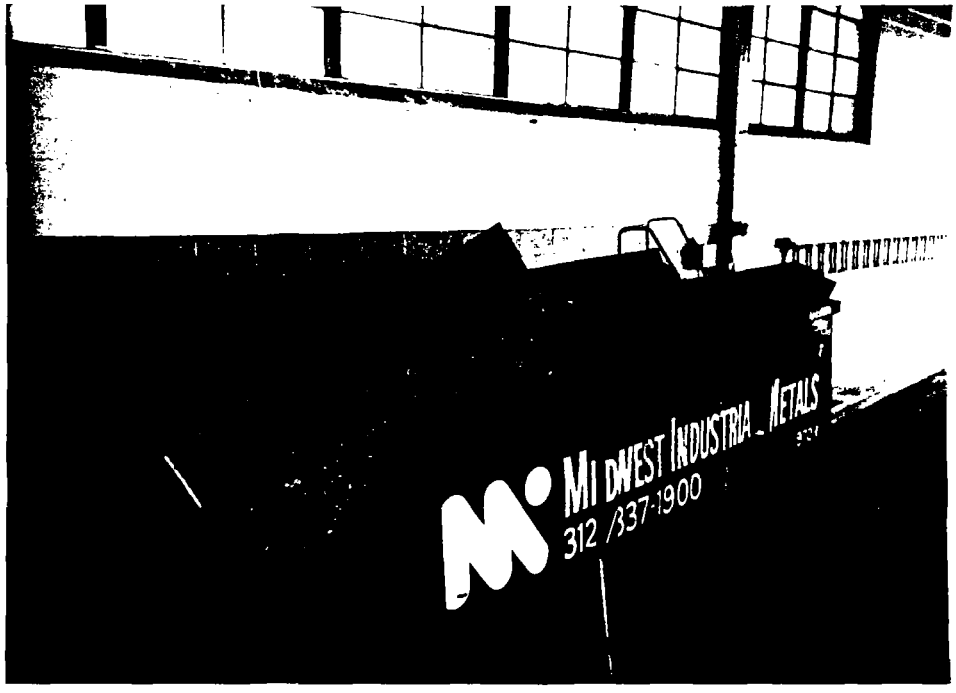
Photograph No. 3
Orientation: South
Description: Olson Satellite Accumulation Area

Location: SWMU 3
Date: April 30, 1992



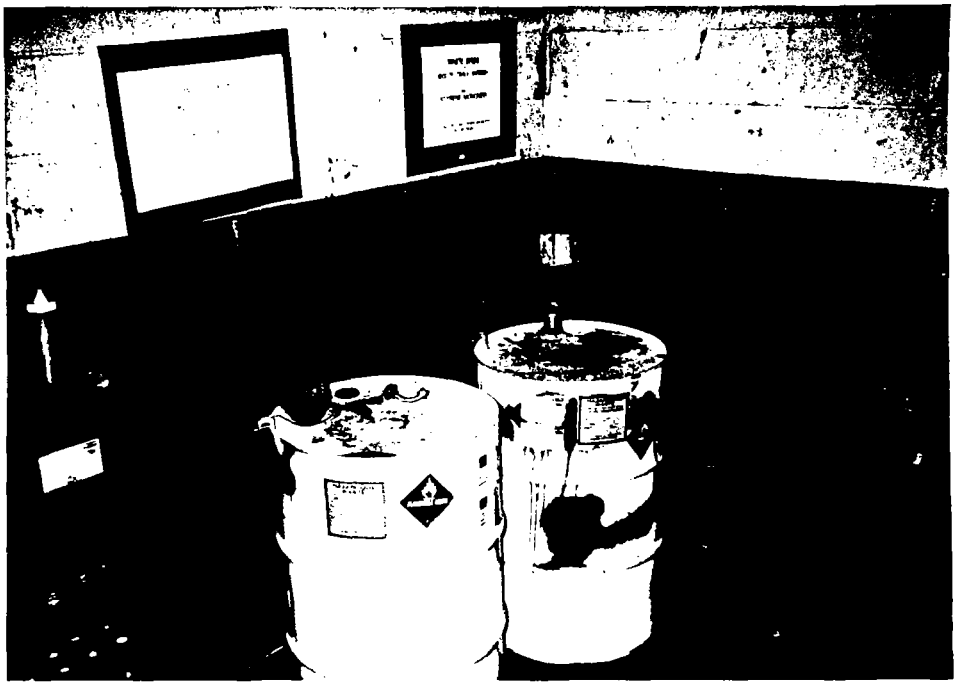
Photograph No. 4
Orientation: West
Description: Hyde Satellite Accumulation Area

Location: SWMU 3
Date: April 30, 1992



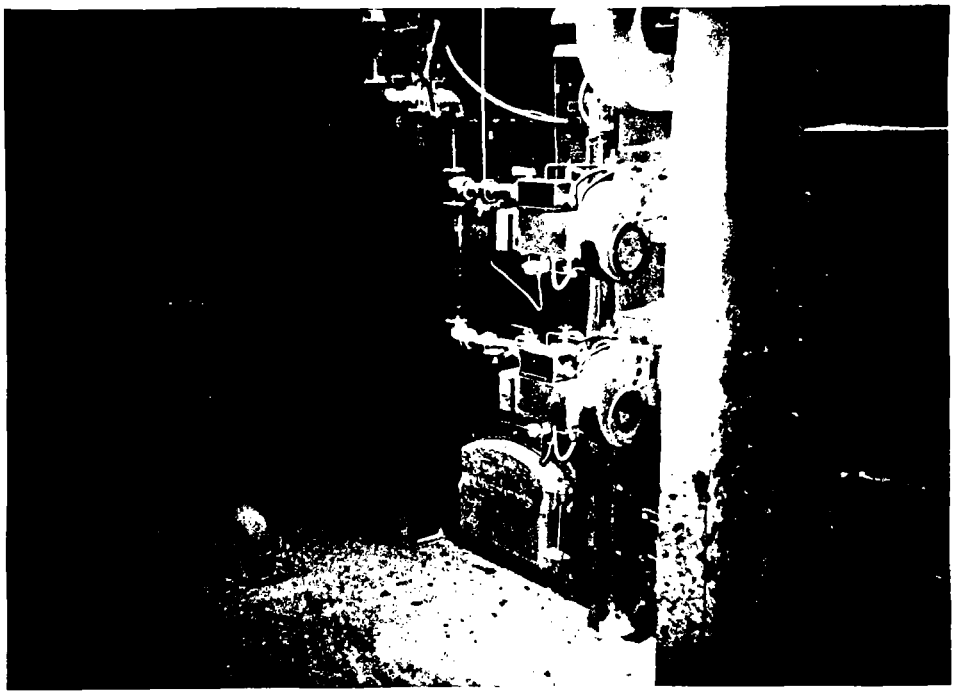
Photograph No. 5
Orientation: Southeast
Description: Scrap Metal Dumpster

Location: SWMU 4
Date: April 30, 1992



Photograph No. 6
Orientation: Northwest
Description: Varnish Satellite Accumulation Area

Location: SWMU 5
Date: April 30, 1992



Photograph No. 7
Orientation: Southwest
Description: Nonhazardous Waste Incinerator

Location: SWMU 6
Date: April 30, 1992

Photograph No. 8
Orientation: West
Description: Main Area of the Drum Storage Area

Location: SWMU 7
Date: April 30, 1992

Photograph No. 9
Orientation: South
Description: Adjacent Hallway of the Drum Storage Area

Location: SWMU 7
Date: April 30, 1992

ATTACHMENT C

VISUAL SITE INSPECTION FIELD NOTES

930 Pete Walsh + Tim Mosely arrive at BODINE Elec. Co. and meet with Duane Ricci. He has us talk quickly with Dave McClenahan / Dir of human resources

945 We meet with Duane in room to discuss details.
He has only been with co. for 1½ years. Mfg. Elec. motors.

2 areas - ① component mfg fac. machining, die casting paint facility (spray) parts washing system Phosphate + TCE wash.

---

② component assembly
dry epoxy ← epoxy coating machines
2 processes (1 running, 1 not yet (both permitted)
- varnishing + thinner section
→ coils
- portable parts washers all over

the plant Safety Clean comes every 2 weeks,

All washes are processed by Safety Clean except for 1 last load of paint to Solvent systems

This year has been a slow year ~~last~~ less waste this year than others.
no alkaline remove this year.

Die casting - purchase alum. + zinc ingots melt them down in pot. used to process structural components that don't move
generate ⚠ Aluminum Dross, which is the residue which is left on
Scrape off + store in drums ?
→ to Storage area /

Cleaning - conveyor (parts washer
conveyed ~~from~~ in buckets through stages

from parts washes - do have discharge

② areas of batch dirt - to sewer
↳ do parts wash discharge

& every quarter they discharge & test and announce this to Metropol Water District.

Dec 20.

* 2 parts wash area is Tri Chlor.
↳ not dumped, stored in drums

3-4 times a year emptied and put in drums and moved to east shipping area.

03 all little parts washes in machine + Assembly area.

only one TCE + Phosphate machine

Machining - take castings + move to machining

oil from this area is used then recycled - all internal oil usage.

Machining coolant - have a recycling syst for coolant ① Hyde + ② Olson

recycling syst - very little wash generated from this recycling

Metal dumpster gets wash from machine

spin the waste metal around to separate the oil from metal

Centrifuge - oil from metal, metal to recycle, oil to drums.

Paint room - Priming + Painting

dye - wash - paint

prime - dry - paint - dry.

washes in drums - thin with thinner

or xylene so it does not become processable
11 drums as of 1/4 yr

all drums get stored in Wash St.

Paint booths have stack permits

Machine area has a couple of air stacks.

5 air permits

Incinerator - paper, cups, lunches on everything? - Bob Mitchell
no indus. waste.

lathe w/ dust collector
- 5 machines not permitted then (last Spring), but they are now.
Approved late Dec, Jan

lathe w/ dust collector

Component Assembly

Rotor coating process - old process

New stack coating operation - not yet (permitted)

Spray powder paint.
(epoxy paint.?

coat all stack (no moment)

both have air permits -

Check on waste from scrubbers lab.

Varnish - 2 processes

dip tank process + trickle machine

(waste, but how?

- brush on epoxy - Check on how it is disposed of. Hand operation probably gets in with something else

Assemble in assembly area

Soldering operations in winding area
small operations.

No stacks in assembly area

grease for machines - grease pit.
(drums)

~~50~~ 525 employees

paint + making area + dye casting - 3 shifts
other areas - 1 shift.

guard for 2nd + 3rd shifts
not on 1st

fence on north to close off.

no surveylance

South - WGN televis. studios
north - big park + parking lot
west - industrial park - ~~mostly~~.
east - parking lot.

Built in 1956-7

Prior, Bodine family had golf course here

not much has changed.

Always had dye casting, pc
all pretty much the same

large quantity beneath

UST-s getting tested + removed this year.

No releases

NORBIC - tenant in building
→ rent space

Photo #1 of final Hz. wash stage
Photo #2 of Hz wash stage area.
Photo #3 East to TCE wash.

Meet Bob Mitchell

Photo #4 5 stage parts wash.

priming + painting area water scrubbed
paint sludge periodically cleaned
and drummed.

Photo #5 paint area + prim.

Dross skimmed off daily + collect
in drum to cool off.
then when full move to aisle +
store to storage area..

3 Dross machines - 3 drms.

Photo #6 Hyde recycle.
photo #7 Olsen recycle

Wash oil from machines recycled

Centrifuge oil goes back to machine

Not hazardous from epoxy work
every 2½ years clean up to photo bay
periodically clean varnish dip tk.

Photo #8 Varnish dip tank.

- not much waste charge filt 1/yr.
- clean out 1/yr.

photo #9 31-44 Flame for Varnish Solvent

Styrene Monomer for plastic drip coating

Feb 1988 11

Photo # 10

10-15 Safety Kleen small parts washers.

370,000 sq ft total

Klean Kit. System

Methylene Chloride

next to epoxy washer

↳ clean stators

↳ cleaning done once or twice a year.

↳ empty + move

↳ Rust inhibitor middle drum.

↳ in the 5-stage wash.

TCE cleaning system

↳ big tank

↳ removed 3-4 times/yr.

Feb 1988 12

Photo #11 ~~TCE tank cleaning System~~

Drum Storage Area.